

Amendments to the Claims

Claim 1 (currently amended): A filter apparatus for filtering contaminants from a fluid, said filter apparatus comprising:

an inlet on said filter apparatus configured to receive said fluid into said filter apparatus;

a centrifugal separator hydraulically connected to said inlet, said centrifugal separator having a rotor housing forming of a rotor chamber and a rotor rotatably disposed inside said rotor chamber, said centrifugal separator configured to separate said fluid into a separated fluid and one or more classes of contaminated fluids;

a chamber assembly having ~~more than one~~ at least a first chamber for receiving and filtering said separated fluid and a second chamber for receiving and filtering at least one of said one or more classes of contaminated fluids to obtain a processed fluid, each of said first chamber and said second chamber having a filter element disposed therein;

a base assembly interconnecting said centrifugal separator and said chamber assembly, said base assembly configured to selectively direct said separated fluid into said first chamber and said one or more classes of contaminated fluids to said ~~more than one~~ second chamber; and

an outlet on said filter apparatus configured to discharge said processed fluid from said filter apparatus.

Claim 2 (original): The filter apparatus according to claim 1 further comprising one or more bearing assemblies configured to permit rotation of said rotor relative to said rotor housing, each of said bearing assemblies having a shaft member disposed in a rotor bearing.

Claim 3 (original): The filter apparatus according to claim 1, wherein said rotor and said rotor housing are generally cone shaped.

1 Claim 4 (original): The filter apparatus according to claim 3, wherein said rotor is configured with a  
2 generally helical wiper.

3  
4 Claim 5 (original): The filter apparatus according to claim 4, wherein said fluid is supplied from a  
5 source of pressurized fluid and said rotor is configured with one or more rotor jets in fluid  
6 communication with said source of pressurized fluid, said one or more rotor jets configured to rotate  
7 said rotor in said rotor housing.

8  
9 Claim 6 (original): The filter apparatus according to claim 1, wherein said fluid is supplied from a  
10 source of pressurized fluid and said rotor is configured with one or more rotor jets in fluid  
11 communication with said source of pressurized fluid, said one or more rotor jets configured to rotate  
12 said rotor in said rotor housing.

13  
14 Claim 7 (original): The filter apparatus according to claim 1, wherein said rotor housing has one or  
15 more channels in hydraulic communication with said chamber assembly.

16  
17 Claim 8 (original): The filter apparatus according to claim 7, wherein said rotor housing has a first  
18 rotor housing channel and said chamber assembly has a settling chamber, said first rotor housing  
19 channel hydraulically interconnecting said rotor chamber and said settling chamber, said first rotor  
20 housing channel hydraulically connected at or near the bottom of said rotor chamber.

21  
22 Claim 9 (original): The filter apparatus according to claim 8, wherein said rotor housing has a  
23 second rotor housing channel and said chamber assembly has a volatile chamber, said second housing  
24 channel hydraulically interconnecting said rotor chamber and said volatile chamber, said second rotor  
25 housing channel hydraulically connected at or near the top of said rotor chamber.

1 Claim 10 (original): The filter apparatus according to claim 1, wherein said chamber assembly  
2 comprises a filter chamber, a settling chamber and a volatile chamber and said one or more classes of  
3 contaminated fluids comprises a particulate fluid and a volatile fluid, each of said filter chamber, said  
4 settling chamber and said volatile chamber having a filter element disposed therein, said filter chamber  
5 configured to receive said separated fluid from a bottom side of said rotor chamber and filter said  
6 separated fluid, said settling chamber configured to receive said particulate fluid from an outer edge of  
7 said rotor chamber and filter said particulate fluid, said volatile chamber configured to receive said  
8 volatile fluid from a top side of said rotor chamber and filter said volatile fluid.

10 Claim 11 (original): The filter apparatus according to claim 10, wherein each of said filter chamber  
11 and said volatile chamber are hydraulically connected to said outlet and said settling chamber is  
12 hydraulically connected to said top side of said rotor chamber.

14 Claim 12 (original): The filter apparatus according to claim 10, wherein said filter element in said  
15 settling chamber is configured for generally vertical filtering of said particulate fluid and said filter  
16 element in said volatile chamber is configured for generally vertical filtering of said volatile fluid.

18 Claim 13 (currently amended): The filter apparatus according to claim ~~11~~ 12, wherein said chamber  
19 assembly is configured to store particulate matter in said settling chamber and store volatile material in  
20 said volatile chamber.

22 Claim 14 (original): The filter apparatus according to claim 10 further comprising a flange in said  
23 settling chamber, said flange positioned above said filter element and configured to direct the flow of  
24 said particulate fluid to said filter element.

1 Claim 15 (original): The filter apparatus according to claim 10, wherein each of said filter chamber,  
2 said settling chamber and said volatile chamber are removably connected to said base assembly.

3  
4 Claim 16 (original): The filter apparatus according to claim 10, wherein said filter elements in said  
5 settling chamber and said volatile chamber are configured to reduce or eliminate turbulence therein.

6  
7 Claim 17 (cancelled)

8  
9 Claim 18 (currently amended): The filter apparatus according to claim 1, wherein at least one of said  
10 ~~more than one chamber is~~ first chamber and said second chamber are removably connected to said  
11 base assembly.

12  
13 Claim 19 (currently amended): The filter apparatus according to claim 1, wherein each of said ~~more~~  
14 ~~than one chamber has~~ first chamber and said second chamber have a bottom section removably  
15 attached thereto for access to the interior thereof.

16  
17 Claim 20 (cancelled)

18  
19 Claim 21 (currently amended): The filter apparatus according to claim ~~20~~ 1, wherein at least one of  
20 said filter element in said first chamber and said second chamber are ~~more than one chamber has a~~  
21 ~~filter element~~ configured to reduce or eliminate turbulence therein.

22  
23 Claim 22 (original): The filter apparatus according to claim 1 further comprising one or more flow  
24 restrictors in said base assembly.

1 Claim 23 (currently amended): The filter apparatus according to claim 1, wherein said chamber  
2 assembly comprises one or more tanks, said one or more tanks forming said ~~more than one~~ first  
3 chamber and said second chamber.

4  
5 Claim 24 (currently amended): A filter apparatus for filtering contaminants from a pressurized fluid,  
6 said filter apparatus comprising:

7 an inlet on said filter apparatus configured to receive said pressurized fluid into said  
8 filter apparatus;

9 a centrifugal separator hydraulically connected to said inlet, said centrifugal separator  
10 having a rotor housing forming of a rotor chamber and a rotor rotatably disposed inside said rotor  
11 chamber, said centrifugal separator configured to separate said pressurized fluid into a separated fluid,  
12 a particulate fluid and a volatile fluid, said rotor having one or more rotor jets configured to discharge  
13 said pressurized fluid so as to rotate said rotor in said rotor housing;

14 a chamber assembly having a filter chamber, a settling chamber and a volatile chamber,  
15 each of said filter chamber, said settling chamber and said volatile chamber having a filter element  
16 disposed therein, said filter chamber configured to receive said separated fluid from a bottom side of  
17 said rotor chamber, said settling chamber configured to receive said particulate fluid from an outer  
18 edge of said rotor chamber, said volatile chamber configured to receive said volatile fluid from a top  
19 side of said rotor chamber;

20 a base assembly interconnecting said centrifugal separator and said chamber assembly,  
21 said base assembly configured to selectively direct said separated fluid into said filter chamber, said  
22 particulate fluid into said settling chamber and said volatile fluid into said volatile chamber ~~and said~~  
23 ~~one or more classes of contaminated fluids to said more than one chamber; and~~

24 an outlet on said filter apparatus.

1 Claim 25 (original): The filter apparatus according to claim 24 further comprising one or more  
2 bearing assemblies configured to permit rotation of said rotor relative to said rotor housing, each of  
3 said bearing assemblies having a shaft member disposed in a rotor bearing.

4  
5 Claim 26 (original): The filter apparatus according to claim 24, wherein said rotor and said rotor  
6 housing are generally cone shaped.

7  
8 Claim 27 (original): The filter apparatus according to claim 27, wherein said rotor is configured with  
9 a generally helical wiper.

10  
11 Claim 28 (original): The filter apparatus according to claim 24, wherein said rotor housing has one  
12 or more channels in hydraulic communication with said chamber assembly.

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14 Claim 29 (original): The filter apparatus according to claim 28, wherein said rotor housing has a first  
15 rotor housing channel hydraulically interconnecting said rotor chamber and said settling chamber.

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17 Claim 30 (original): The filter apparatus according to claim 29, wherein said rotor housing has a  
18 second rotor housing channel hydraulically interconnecting said rotor chamber and said volatile  
19 chamber.

20  
21 Claim 31 (original): The filter apparatus according to claim 24, wherein each of said filter chamber  
22 and said volatile chamber are hydraulically connected to said outlet and said settling chamber is  
23 hydraulically connected to said top side of said rotor chamber.

1 Claim 32 (original): The filter apparatus according to claim 24, wherein said filter element in said  
2 settling chamber is configured for generally vertical filtering of said particulate fluid and said filter  
3 element in said volatile chamber is configured for generally vertical filtering of said volatile fluid.

4  
5 Claim 33 (original): The filter apparatus according to claim 32, wherein said chamber assembly is  
6 configured to store particulate matter in said settling chamber and store volatile material in said  
7 volatile chamber.

8  
9 Claim 34 (original): The filter apparatus according to claim 24 further comprising a flange in said  
10 settling chamber, said flange positioned above said filter element and configured to direct the flow of  
11 said particulate fluid to said filter element.

12  
13 Claim 35 (original): The filter apparatus according to claim 24, wherein each of said filter chamber,  
14 said settling chamber and said volatile chamber are removably connected to said base assembly.

15  
16 Claim 36 (original): The filter apparatus according to claim 24, wherein said filter elements in said  
17 settling chamber and said volatile chamber are configured to reduce or eliminate turbulence therein.

18  
19 Claim 37 (original): The filter apparatus according to claim 24 further comprising one or more flow  
20 restrictors in said base assembly.

21  
22 Claims 38-51 (cancelled)

23  
24 Claim 52 (original-allowed): A method of filtering contaminants in a lubricating fluid from an engine  
25 lubricating system, said method comprising the steps of:

26 (a) receiving said lubricating fluid into a filter apparatus;

1 (b) separating said lubricating fluid with a centrifugal separator into a separated fluid, a  
2 particulate fluid and a volatile fluid, said centrifugal separator having a rotor rotatably disposed in a  
3 rotor chamber, said rotor having one or more rotor jets in communication with said source of  
4 pressurized fluid and configured to rotate said rotor in said rotor chamber;

5 (c) directing said separated fluid to a filter chamber, said particulate fluid to a settling  
6 chamber and said volatile fluid to a volatile chamber;

7 (d) filtering said separated fluid, said particulate fluid and said volatile fluid to obtain a  
8 processed fluid; and

9 (e) discharging said processed fluid to said source of fluid.

10  
11 Claim 53 (original-allowed): The method of claim 52, wherein said rotor is conically-shaped and  
12 configured with a generally helical wiper.

13  
14 Claim 54 (original-allowed): The method of claim 52 further comprising the step of returning at least  
15 a portion of said processed fluid to said centrifugal separator after said filtering step to repeat steps (b)  
16 through (d).

17  
18 Claim 55 (original-allowed): The method of claim 52, wherein said filtering step is accomplished  
19 with a filter element disposed in each of said filter chamber, said settling chamber and said volatile  
20 chamber.

21  
22 Claim 56 (original-allowed): The method of claim 52, wherein said filter chamber is configured to  
23 receive said separated fluid from a bottom side of said rotor chamber, said settling chamber is  
24 configured to receive said particulate fluid from an outer edge of said rotor chamber, said volatile  
25 chamber is configured to receive said volatile fluid from a top side of said rotor chamber.



1 Claim 57 (original-allowed): The method of claim 52, wherein at least one of said filter chamber,  
2 said settling chamber and said volatile chamber is removably connected to said filter apparatus.

3  
4 Claim 58 (original-allowed): The method of claim 52, wherein said directing step is accomplished  
5 with a base assembly disposed between said centrifugal separator and said filter chamber, said settling  
6 chamber and said volatile.

7  
8 Claim 59 (original-allowed): The method of claim 59, wherein said base assembly comprises one or  
9 more channels, one or more ports and one or more flow restrictors.

10  
11 Claim 60 (original-allowed): The method of claim 52, wherein said lubricating fluid is oil.

12  
13 Claim 61 (original-allowed): The method of claim 60, wherein said engine lubricating system is used  
14 with an internal combustion engine.